# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/849,171 | 05/04/2001 | Brendan Alexander Voge | PDNO10007439-1 | 9679 |

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| EXAMINER |
|---|
| CHANG, JUNGWON |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2154 | |

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on _28 June 2001_.

2a) ☐ This action is **FINAL**.    2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) _1-28_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-28_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

1.      Claims 1-28 are presented for examination.

### *Claim Rejections - 35 USC § 102*

2.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

3.      Claims 1, 3-6, 10, 12-15, 19 and 21-25 are rejected under 35 U.S.C. 102(e) as

being anticipated by Ogus (US 6,587,875).

4.      As to claims 1 and 19, Ogus discloses the invention as claimed, including a

method for operating a network (Ethernet; 18, fig. 2; Token ring; 34, fig. 3; 106; 108; fig.

6) connecting a plurality of processor cells (computer A-D; fig. 9) that are already

configured in a multiprocessor system (fig. 9; col. 20, lines 43-44) with a plurality of links

(AB-AD; BA-BD; CA-CD; DA-DC; fig. 9; col. 18, lines 29-37), comprising:

        recognizing by software operating (335, 336, 337, fig. 14; col. 6, lines 6-15) on at

least one processor cell (computer A-D; fig. 9) when a network operation can use a link

of said plurality of links to implement a network operation (col. 3, lines 4-19; col. 3, line

66 – col. 4, line 6); and

   utilizing said link of said plurality of links to perform said network operation (col.

6, lines 27-52; col. 18, lines 29-44; col. 22, lines 58-61).


5.    As to claim 3, Ogus discloses said software is an operating system (335, fig. 14;

col. 6, lines 6-15).


6.    As to claim 4, Ogus discloses said network is an Ethernet local area network

(Ethernet; 18, fig. 2; col. 6, lines 44-51).


7.    As to claim 5, Ogus discloses said multiprocessor system includes at least two

processor cells interconnected in a configuration chosen from a group of configurations

consisting of: a fully interconnected configuration (fig. 9), a cross-bar configuration, a

mesh configuration, or a ring configuration.


8.    As to claim 6, Ogus discloses determining whether said link provides sufficient

bandwidth to complete said network operation (col. 2, lines 49-56; col. 3, lines 4-19; col.

8, line 65 – col. 9, line 2; col. 14, lines 52-65).


9.    As to claim 10, it is rejected for the same reasons set forth in claim 1 above. In

addition, Ogus discloses installing software on at least one processor cell of said

plurality of processor cell (335, 336, 337, fig. 14; col. 6, lines 6-15), wherein said

software is aware of said plurality of links between said plurality of processor cells (col.

2, lines 49-56; col. 3, lines 4-19; col. 8, line 65 – col. 9, line 2; col. 14, lines 52-65).


10.     As to claims 12 and 22, it is rejected for the same reasons set forth in claim 3

above.


11.     As to claims 13 and 21, it is rejected for the same reasons set forth in claim 4

above.


12.     As to claims 14 and 24, it is rejected for the same reasons set forth in claim 5

above.


13.     As to claims 15 and 25, it is rejected for the same reasons set forth in claim 6

above.


14.     As to claim 23, Ogus discloses said operating system is installed on at least one

processor cell of said plurality of processor cells (335, fig. 14; col. 6, lines 6-15).


### Claim Rejections - 35 USC § 103

15.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16.     Claims 2, 7-9, 11, 16-18, 20 and 26-28 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Ogus (US 6,587,875), in view of Dally et al. (US 6,370,145),

hereinafter referred to as Dally.


17.     As to claim 2, Ogus discloses multiprocessor system (fig. 9; col. 20, lines 43-44).

However, Ogus does not specifically disclose a symmetric multiprocessor system.

Dally discloses a symmetric multiprocessor system (parallel multiprocessors; col. 4,

lines 4-12 and 39-54). It would have been obvious to one of ordinary skill in the art at

the time the invention was made to combine the teachings of Ogus and Dally because

Dally's symmetric multiprocessor system would improve the scalability of Ogus' system

by providing equal processor load balancing, thereby reducing response time.


18.     As to claim 7, Ogus discloses a first link of said plurality of links does not provide

sufficient bandwidth to perform said network operation (link saturation; col. 14, lines 52-

65; col. 19, lines 28-31). However, Ogus does not specifically disclose choosing a     ‒

second link from said plurality of links when a first link of said plurality of links does not

provide sufficient bandwidth to perform said network operation. Dally discloses choosing

a second link (alternative path; col. 6, lines 66-67) from said plurality of links (col. 6,

lines 30-39) when a first link of said plurality of links does not provide sufficient

bandwidth to perform said network operation (congestion; bottleneck; col. 5, lines 24-

43) (col. 5, lines 44-53; col. 6, lines 59-67). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to combine the teachings of

Ogus and Wipfel because Wipfel's backup link would improve reliability of Ogus' system

by allowing for an alternative path to improve fault tolerance and load balance (Dally;

col. 6, lines 66-67).


19.     As to claim 8, Ogus does not specifically disclose suspending said network

operation when said link of said plurality of links is not providing sufficient bandwidth to

perform said network operation; and resuming said network operation when said link of

said plurality of links provides sufficient bandwidth to perform said network operation.

However, Dally discloses suspending said network operation when said link of said

plurality of links is not providing sufficient bandwidth to perform said network operation

(stop sending data; col. 2, lines 30-35); and resuming said network operation when said

link of said plurality of links provides sufficient bandwidth to perform said network

operation (channel state update; col. 10, line 63 – col. 11, lines 20; channel state table;

80, fig. 11B; col. 11, lines 27-37; status of the channel: idle, busy, tail pending; col. 12,

lines 23-45; col. 12, line 54 – col. 13, line 26). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to combine the teachings of

Ogus and Dally because Dally's suspending and resuming the network operation would

improve the performance of Ogus' system by eliminating wasted time by blocking

network operation when aware of the saturation on the link.

20.    As to claim 9, they are rejected for the same reasons set forth in claims 7 and 8

above.


21.    As to claims 11 and 20, it is rejected for the same reasons set forth in claim 2

above.


22.    As to claims 16 and 26, it is rejected for the same reasons set forth in claim 7

above.


23.    As to claims 17 and 27, it is rejected for the same reasons set forth in claim 8

above.


24.    As to claims 18 and 28, it is rejected for the same reasons set forth in claim 9

above.


## *Conclusion*

25.    The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure:

Van Doren et al, 2002/0146022, Edwards et al, 2002/0028679, Cunningham,

2002/0087713, Thorson et al, patent 6,643,764, Bawa et al, 6,697,333, Kusano et al,

patent 5,933,422 disclose a method and system for determining whether there is

sufficient bandwidth on interconnection link.

Wipfel et al, patent 6,353,898, Fedyk et al, patent 6,560,654, Saleh et al,

2003/0031127, Galand et al, 2004/0042402, disclose a method and system for

determining alternative path in case of a link failure.

Charlesworth et al, "The Starfire SMP Interconnect", Sun Mircrosystems, Inc, November

1997.


26.　　Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jungwon Chang whose telephone number is 571-272-

3960. The examiner can normally be reached on 9:30-6:00 (Monday-Friday).

　　　If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John A Follansbee can be reached on 571-272-3964. The fax phone

number for the organization where this application or proceeding is assigned is 703-

872-9306.

　　　Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

JWC
February 14, 2005